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SCIENCE AND TECHNOLOGY

PRESENT, FUTURE OUTLOOK FOR JAPANESE OIL EXPLORATION

Tokyo TSUSAN JANARU in Japanese Aug 81 pp 64-71

[Article by Toshiaki Kitamura, Exploration Section, Petroleum Division, Agency of Natural Resources and Energy]

[Text] Last May, successful test drillings were announced successively for the Aga Oki northern project in Niigata Prefecture in Japan and in the Bonai project in China.

In both cases, tests showed a considerable volume of oil flow. Even though it is impossible to judge the possibility of future commercial production or the scale of commercial oilfileds on the basis of these tests, it seems reasonable to have high expectations.

As is well known, Japan has not been actively engaged in oil production for very long. Petroleum development is a field which, because of its nature, requires financial strength and accumulated technological expertise and experience. So one could say that Japan started off under a large handicap.

However, through the combined efforts of both government and private sectors, Japanese petroleum development has expanded year by year. From an international viewpoint, we have not yet achieved a great deal, but certain results have accumulated, and the successful test drillings in the two recent projects are built upon this foundation.

Below I would like to give a brief outline of these two projects and discuss the present situation and future prospects of petroleum development in Japan.

Domestic Development of Petroleum and Natural Gas

The volume of petroleum and natural gas reserves in Japan is estimated at 1.3 billion kiloliters offshore and 0.2 billion kiloliters on land. The offshore reserves in particular are expected to make active and large-scale exploration worthwhile.

The present domestic production of petroleum and natural gas is approximately 3 million kiloliters (petroleum equivalent). Approximately 500,000 kiloliters

come from the offshore gasfields and oilfields in Aga, Niigata Prefecture, which were discovered in 1972 and began producing in 1976.

Present offshore oilfields and gasfields are limited to Aga Oki. However, additional gasfields were discovered off the coast of Joban, and promising deposits have been identified off the coast of Teradomari and Yufutsu. Also, a Japan-ROK joint continental shelf development project is underway. So offshore petroleum development around Japan is progressing steadily, and the successful test drillings in the Aga Oki northern project will greatly encourage this progress.

In 1972, the New Japan Sea Petroleum Development K.K. received loans and investment from the Petroleum Development Corporation and began exploration. It is now making its third test drilling. Well No 3 is located 15 kilometers offshore from Niigata city under 88 meters of water. The drilling was carried out up to 220 meters using the "No 2 White Dragon" rig owned by the Petroleum Development Corporation, and six petroleum deposits have been discovered. A test was made on oil and gas in the sixth deposit, and the company was able to obtain approximately 2,000 to 5,000 barrels of crude petroleum per day and approximately 30,000 to 80,000 cubic meters of gas per day.

The crude petroleum discovered was rated at better than 30 API (American Petroleum Industry Association standards). It is a good-quality light oil.

It is difficult from these test results to estimate the scale of production when commercial production commences. However, the test results are much better than those obtained from the Aga offshore gasfields and oilfields which are now in production, so good results are expected from future exploration (the Aga offshore oilfields and gasfields presently produce approximately 1,000 barrels of petroleum per day and 1 million cubic meters of gas per day).

More thorough exploration will continue in the Aga northern project. More wells will be drilled to evaluate the lateral spread of the petroleum deposits. After the possibility of commercial production is confirmed, development will begin.

In addition, a decision was made in May of this year to begin development of the Joban Oki gasfields, which were discovered in 1973. They have subsequently been studied by Teikoku Petroleum, together with other companies, for feasibility of commercial production.

These gasfields are located 40 kilometers off Narabamachi, in Fukushima Prefecture. They contain confirmed natural gas reserves of approximately 5 billion cubic meters (equivalent to 5 million kiloliters of oil). By deciding to begin development, the company plans to supply 1.2 million cubic meters of gas per day by 1984.

Present domestic offshore production is approximately 2.2 million kiloliters (petroleum equivalent). A greenturf deposit has been discovered near Nagaoka city in Niigata Prefecture. In the future, this will be developed and active exploration will continue, chiefly around northeastern Honshu and Hokkaido.

Obviously, domestic oil and gas are the most stable supply sources. The securing of a local energy supply contributes to the economy of local regions and also plays an important role in creating the technological foundations for overseas petroleum development.

Our goal is to triple the present domestic production of oil and natural gas by 1990, and for this purpose it is necessary to expand measures for basic surveys of oil and natural gas resources by the government and loans and investment by the Patroleum Development Corporation for exploration.

Autonomous Development Overseas

The present amount of imported crude petroleum autonomously developed by Japan is 2.2 million kiloliters, about 8 percent of the total of oil imports.

There are about 40 projects being carried out by Japan around the world (limited to projects receiving assistance from the Japan Development Corporation). Of these, about 13 projects are in production, including Arabian Petroleum, Abu Dhabi Petroleum, Indonesia Petroleum, Japan Petroleum, and Zaire Petroleum.

In addition, there are six projects, including Thai Offshore and Sakhalin Offshore, in which oil has been discovered; either preparations are underway for production or the feasibility of production is under study.

About 20 exploration projects are in progress in such areas as Southeast Asia, the Middle East, North America, and Central and South America.

The Chinese Bohai project is one of the large-scale projects now in the exploration phase.

This project was proposed by the Chinese as a joint project for petroleum development in the region. The proposal was made to the Japanese on the occasion of MITI Minister Komoto's visit to China in September 1978. Afterward, negotiations were carried on between the Chinese and the Petroleum Development Corporation.

A basic agreement was made between the two parties in December 1979. In April of the following year, a new company (Japan-China Petroleum Development K.K.) was organized to serve as the agent for promotion of this project from the Japanese side, and a formal agreement was made with the Chinese in May of the same year. This and the French project were the first exploration projects to be undertaken by foreign industry to develop Chinese petroleum.

Exploration work began in July of the same year, and the first test well was drilled in December. Drilling stopped at 3,300 meters in March 1981.

The production test of the first test well was successful. Some 1,000 tons of petroleum and 600,000 cubic meters of natural gas were obtained per day.

Examples of great success with a first test well are rare anywhere in the world. In Japan, the only similar successes were in the Arabian Petroleum and Abu Dhabi

Petroleum projects. (Internationally, the rate of success in first test well drillings is about one in four or five.)

Because of the large production result of 1,000 tons per day, success in future commercialization is likely.

It is worthy of note that the quality of the oil is API 41, making it a better quality light oil than Arabian light.

It is impossible to judge what scale of production can be expected when the oilfields go into commercial production until a complete physical survey is made of the target structure of the first well and an evaluation well is drilled. Judging from the size of the deposit, however, it seems reasonable to expect large-scale production.

If future exploration or development goes well, it is expected that production will begin around 1985.

The agreement provides that the Japanese will obtain approximately half the production volume from this project.

The Japanese are operating this project in the exploration and development phase. The success of the first test well has surely heightened the international reputation of Japanese capabilities in petroleum development technology.

During the 5-year exploration period, it is planned that 50 test wells (including evaluation wells) will be drilled. In addition to the target structure of the successful first test well, the discovery of other promising structures is expected.

Along with this project, the Japanese (Chengbei Petroleum Development K.K.) are proceeding to develop the previously discovered Chengbei oilfields in the western part of the Bohai. Production in these oilfields is expected to begin in 1984.

China is one of the only frontiers left for petroleum development. Beginning this fall, the countries of Europe and the United States are expected to compete in international bidding for petroleum development to take place in the Yellow Sea and the South China Sea. The Petroleum Development Corporation and other organizations in Japan are qualified to participate in the bidding, and it is necessary for them to enter the bidding aggressively, using the successful test drilling in the Bonai project for support.

In autonomous overseas development, there is a goal to increase the volume of imports by 20 percent by 1990. If the projects already begun run smoothly, it is estimated that we can expect 800,000 barrels per day of autonomously produced crude oil to be imported. More effort should be made toward this goal by vigorously working on new projects, including those in China.

By expanding the volume of autonomously produced crude oil, it will be possible to compensate for the future increase in Japanese oil imports. Besides greatly contributing to a stable supply of oil to Japan in the future, it is expected

that this will help Japan fulfill its international obligations as a major consuming nation.

The activities of Japanese development companies expand year by year and are producing solid results. From an international point of view, however, in exploration and development investment, for example, total Japanese efforts, including government assistance, do not even match the investment of a single middle-size U.S. development company, let along one of the majors. There is also a tremendous gap in the number of technicians. Exxon alone has 4,000 technicians, compared to only 800 in all of Japan.

Petroleum development requires a much larger amount of financing than other industries. Also, the risk is great. Only 2 to 3 percent of test drillings lead to the discovery of commercial oilfields. Even in successful cases, a long time period is required for recovery of the investment.

Also, the circumstances surrounding petroleum development are less favorable. The geographical and natural conditions of target areas are becoming worse, and it is getting harder to obtain development concessions.

In such a situation, a greater effort by development companies is certainly necessary in order to expand autonomous development. And in light of the special conditions of petroleum development, the formulation of better policies by the government is also an urgent issue.

At present, the world petroleum market is oversupplied. However, this oversupply may well be fundamentally caused by a variety of short-term factors and be very unsubstantial. The basic conditions underlying the instability of midrange petroleum supply and demand must be firmly controlled. I would like once again to emphasize the importance of steady progress in petroleum development by Japan.

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CSO: 4105/222

COLLAPSE OF TOYOTA-FORD TIE-UP STUDIED

Tokyo TOKI NO KEIZAI in Japanese No 298, Jul 81 pp 22-27

[Text] The curtain fell all too quickly on the Toyota-Ford tie-up which created a sensation in the world's automobile circles as the "tie-up of the century." Even though this conclusion was anticipated by some from the very beginning, the world's enterprises are desperately trying to survive amid intense competition and trade friction.

Will "Tie-up of the Century" End In Misfire

22 May. Concerning the year long tie-up negotiations going on between Toyota Motor Co., Ltd. and America's Ford Company, when the intent "to abandon the joint venture company formula and convert to a license for production formula" was revealed, officials at other automobile companies promptly declared, "we knew this would happen from the beginning."

Depending on how it is taken, this is quite an insolent remark, and in actuality this kind of talk was whispered by some from the beginning.

This is not because the drama of tie-up negotiations was born from Toyota's or Ford's own conception, but it had the character of a "malformed illegitimate child" brought about by Japan-U.S. trade friction. There was a strong political coloring in it from the start. It can be said that for Toyota, which was pressed into choosing "either export regulation or local production" in order to ease the friction, the situation was one of having to get up and do something.

Therefore, "Toyota now had a reason for abandoning the joint venture plan with Ford" at the point where self-imposed export regulation of Japanese automobiles progressed just as the U.S. wanted and one period in the "Japan-U.S. automobile war" ended.

It was a question of time for Toyota, which was planning the timing for when and where to cause a miscarriage, to indicate its intention. (business leader) It was as natural as natural can be to have this kind of viewpoint.

The forecast was right on target. Several days later Toyota announced it was abandoning its joint venture plan. In the final analysis, the result was just as conjectured, that is, "Toyota is playing for time."

It probably is not a consequence of that, but Toyota's expression of its intention was somewhat inarticulate and its statement, "it can be anticipated the joint venture company formula in which each invests half will run up against various difficulties and troublesome problems in terms of management, and it has now become a question of whether the original plan (the joint venture company formula) is suitable or not," was vague.

Concerning whether Ford will accept the rescinding of the joint venture plan or not, Toyota confined itself to its own impressions: "Ford is also examining this." As for future negotiations, it is said the intent is to "hold administrative level meetings during the month of June and formally propose the license to produce formula to Ford."

Since in the previous negotiations (March), both companies agreed that the car style would be the improved "Town-S," a cab-over wagon, it seems Toyota intends to push forward with concrete negotiations with Ford, proposing a formula in which it turns over to Ford the desing drawings of the Town-S and gives it the production rights, including a partial tie-up for car parts, that is, the license to produce formula.

At any rate, the curtain fell all too soon on the "tie-up of the century drama" which created a sensation with great fanfare. To that extent, it may be said the "collapse view" persistently whispered from the start hinted at a complex backstage. Anyhow it can be said that it has left a very bad aftertaste.

Only Mass Media In Uproar.

When we try to trace what is behind the tie-up drama in order to look for the truth in the rumors, an unanticipated aspect rises to the surface.

First of all let's turn back the focus to the day on which the tie-up was announced and then hunt for details.

It was the 7:00 o'clock NHK evening news on 9 July last year which let out the first report of the Toyota-Ford tie-up. The substance of the report was that Toyota and Ford will tie up and Toyo Kogyo Co., Ltd. will also join in; and Ford will make an investment of its non-operating factories; monthly production will be 20,000 cars and production will start as early as 1981.

Hearing the NHK news with great surprise, it was the mass communications companies which suddenly became excited. However on that very day, President Eiji Toyota, the key to all this, was away in Washington. Finally, NHK went to the Ministry of International Trade and Industry (MITI) just two hours before televising, and grabbed Hiroyasu Ono, managing director (Toyota Motor Co., Ltd. Tokyo Branch president) who had come to the Keidanren (Federation of Economic Organizations) building and a press conference was held at 9:30 p.m.

On the other hand, Toyo Kogyo Co., Ltd. was quick with a counterplan. On that same night, President Yoshiki Yamazaki was also present at a press conference and hinted at a "three company tie-up" which included his own company. Ichiro Isoda, president of The Sumitomo Bank, Ltd. held a press conference the next day on the 10th.

With this shocking news of a tie-up between two great manufacturers of Japan and the U.S., other competitor companies reacted responsively. For example, consternation could be seen when officials from Mitsubishi Motor Co., Ltd. and Mitsui & Co., Ltd. got together at a restaurant on the night of the 10th and exchanged information.

As can be seen in the above, those who knew about the NHK report in advance were top executives of Toyota and Ford, leaders of Toyo Kogyo and Sumitomo Bank, and some officials at MITI and in the Liberal Democratic Party (LDP).

However, comments from Toyota, which is the star in this negotiations drama, and Toyo Kogyo and Sumitomo Bank, which are the other concerned parties, show subtle differences in view. In one angry scene, an upset Toyota official said, "we don't remember agreeing to Toyo Kogyo's capital participation. Talks about to be concluded may not come to a conclusion with such glib talk. We are not sure whether we would let them into the discussions in the future."

A tie-up between enterprises is troublesome. It is more so when the partners are large enterprises of different nationalities.

The following occurred on 28 July after these troubles had been experienced. In the afternoon of the 28th, Toyota's President Eiji Toyota ran around without any rest, visiting Prime Minister Zenko Suzuki, Chief Cabinet Secretary Kiichi Miyazawa, MITI Minister Rokusuki Tanaka and other important government and LDP leaders. This was in order to report the course of negotiations with Ford was making very slow progress and to request the government's support in actualizing the tie-up.

On the other hand, Nissan Motor Co., Ltd., with headquarters located in Ginza-Roku-chome section of Tokyo, was feverishly dealing with the mass media. It had informally decided to scout Marvin T. Runyon, former vice-president of production at Ford, as president of "Nissan Motor Manufacturing" which had just been set up in Delaware to manufacture small sized trucks.

Around that time, in a room in one of the major city banks in the capital, several leaders sat tensely around a one page memo. It seems the content of the memo concerned the Ford-Toyota tie-up and stated Ford would have a major announcement by 5 August.

These three occurrences on the afternoon of that Monday each had its own character and had no logical connection to the others, but in some sense, they were more than accidents; it was as though they were manipulated by one string revolving around the Ford cog. In other words, it can be said that the Toyota-Ford tie-up negotiations hinted at these three occurrences.

Eiji Toyota, who met individually with very important leaders in the government and LDP, stated in answer to reporters' questions, "we have only agreed to continue our talks with Ford; nothing is yet definitely decided." If this is true, the memo the city banks had, that is, the information that "Ford will refuse Toyota's proposal by 5 August" curiously takes on the graphic flavor of reality, and the fact that President Toyota requested the government's cooperation also fits.

To put it strongly, it can be said "Toyota has fallen into the depths of a dilemma by making shrewd Ford its partner." (business world leader)

The authenticity is not certain but it is said that one of the Toyota executives uttered the following by accident at a gathering of some financial men. "When I think about it now, Kohei Matsuda of Toyo Kogyo, who fought alone with Ford as its partner, was quite an actor."

Shrewd Ford's Multi-faceted Strategy

The Toyota-Ford tie-up talks began to show subtle development around 20 July.

Sumitomo Bank President Ichiro Isoda until now emphasized the "three company tie-up" which included Toyo Kogyo and his "underlying intention" of trying not to miss the current of the times was clearly understood. On the 22nd, he suddenly changed his tone, saying, "both Toyota and Ford should not call off the joint venture plan."

At about the same time, Yoshiki Yamazaki of Toyo Kogyo stated, "this plan has already been rejected. The mass media reports are not altogether accurate."

Don't be surprised, but there are indications that Sumitomo Bank and Toyo Kogyo caught in advance the news that Ford will reject Toyota's proposal.

It is understandable that Toyo Kogyo, which has a capital partnership with Ford, and Sumitomo Bank, which acted as intermediary, are in the position of being able to obtain "information" quickly, but even so, why did they have to release it publicly in such a way. If Ford had that as a deliberate intent, whatever was Ford's aim in carrying out such an elaborate drama?

However, in the memo the major city banks had acquired, there was one more item which caused concern. It is the puzzling item that Ford will make a major announcement by 5 August.

But this puzzle was unexpectedly settled early. On the 4th, Ford brought a case to the ITC (U.S. International Trade Council) for the regulation of Japanese car imports to the 1974-76 level, using as the basis "the 201 articles of the 1974 commerce law."

The case has taken the form of joing the UAW (United Automobile Workers' Union) lawsuit filed on 12 June. It remained somewhat unnatural for Ford to be the first, taking over the lead from Chrysler which had been driven into a corner

just before bankruptcy. Moreover, the substance of the case explicitly aimed not at making all imported cars the target, but at shutting out only Japanese cars.

Then, as one reason why Ford took a bold course in this case, it was stated that "we called on Japan to invest in the U.S., but Japan's business world ignored this and expanded facilities domestically."

Therein lies Ford's attitude which completely ignored Toyota which tried to start negotiations. Even so, why did Ford toake a bold course with this case which hurt Toyota's feelings? Depending on how it is considered, it is not too much to say that alienating Toyota was the "major" announcement.

Viewed sympathetically, 1. Ford has in an American business-like fashion left no doubt that tie-up negotiations and the case are separate issues; 2. As a measure for the union, it imputed responsibility for management's failure to Japanese automobiles. But if so, the question still remains why did Ford exclude from the lawsuit foreign cars other than Japanese cars? Perhaps it wanted the regulation of imports more than the tie-up, or maybe Ford estimated in its intent toward Toyota it could make favorable progress in the negotiations if it shook Toyota with the lawsuit.

Be that as it may, Ford is certainly a strong partner for Toyota.

Jumping ahead in our discussion, Nissan Motor Co., Ltd. seemed to have thoroughly calculated this shrewdness of Ford. Therefore, "it was amazed at the news of the Toyota-Ford tie-up," (President Shun Ishihara) and it had doubts about the partnership.

Those who supported such thinking were three foreign lobbyists who are in the inner circle of Nissan.

One of them is George Allen, president of Potomac International Consultants. He was an adviser to Republican presidentail candidate Reagan and it was said he would become Secretary of State if a Reagan administration came into being. U.S. Nissan contracted with Allen as an adviser.

One is Everly, former USTR representative who vehemently pushed Japan for liberalization as special trade negotiation representative at the Hakone conference in 1972. He contracted with Nissan in September the year before last, and was a central figure who advised and implemented the local production of small sized trucks in the U.S.

The third is Wolf (former USTR assistant representative) who contracted as legal adviser last year.

Seeing the on-location top secrets sent almost daily by these three lobbyists, President Ishihara crystallized his plans for a bold foreign strategy. Interestingly, President Ishihara also had examined the formula of joint production

in the U.S. However, his answer was "no." Therefore, he stated that if the Toyota-Ford tie-up "goes OK, it means our investigative capacity is superficial."

It is said that upon making exact calculations with this vigorous intelligence network, Nissan scouted Marvin T. Runyon, former Ford vice-president, as one part of its countermeasures for the U.S. market after assessing there would be not tie-up between Toyota and Ford. Because of this background, it can be said these three occurrences of 28 July are exceedingly revealing.

Nissan's Judgment Declining Joint Production

Let's explain a little more the details of why Nissan Motor Co., Ltd. examined the plan for joint production in the U.S. and abandonned it in the end.

Ford gave the opportunity for joint production. Ford proposed talks on the sale of its plant in Mawah, New Jersey to Toyota and Nissan with the permanent shutdown of that plant. At one time, Nissan President Ishihara, who received the offer, gave serious consideration to using this plant and doing joint manufacturing with Ford, but somehow there were many demerits and so he abandoned the idea in the end.

On the other hand, Toyota set up a project team for an advance into the U.S. for local production in the U.S., and examined it all from many angles, but no conclusion was forthcoming. In the meantime, the initiative was taken by Honda Motor Co., Ltd. and Nissan, and the local production plan was totally delayed.

At this juncture, the Japan-U.S. automobile friction intensified day by day and pressure from the UAW and the U.S. government escalated steadily. USTR representative Askew, unable to contain himself, strongly urged Toyota, which has lost the timing in such circumstances, to make an advance into the U.S. It was at this time that Toyota was persuaded by MITI Vice-minister Toshihiko Yano to launch into plants at the earliest opportunity.

It is said that Toyota, put into a difficult position, solidified its intent to launch into the joint production formula with Ford. Ford, having received the proposal from Toyota, placed Harold Poling, executive vice-president who is the top executive for the North America region and who is well versed in U.S. domestic strategy starting with small car development and production plants, as the top executive for these tie-up negotiations.

For Ford which had a large deficit and was facing the greatest crisis since its founding, joint production with Toyota would first of all fulfill the role of an emergency measure in order to deal with the sudden turn in the U.S. market. At the same time, it may become a great stimulus for renovating the lagging small car production process. In addition, small car development investment could be economized.

If joint production is undertaken, the overseas investment risk would be small even for Toyota and would relate to a solution of trade friction. The number of days until the start of production would be shortened since part of the existing facilities could be used. The views of both Toyota and Ford unexpectedly coincide.

However, even though Ford's complex position of on the one hand playing for time by lowering the flag of free trade principles traditional until now and urging the regulation of Japanese automobile imports, and on the other hand groping for joint production with Toyota, seems to be a "desperate" tactic which threw away the honor of a distinguished industry. Actually, it was nothing other than a declaration, "we are capable of doing anything to protect our position of the world's number two automobile manufacturer."

As far as it goes, it seems it can be said that Nissan's "calculations" of Ford hit the mark.

Desperate Measure To Avoid Japan-U.S. Automobile Friction

It was predestined that Toyota chose Ford as its partner for joint production.

Forty-eight years ago, in 1933, President Zenichiro Toyota, Toyota's founder, used genuine Ford parts in a trial manufacture of demoestically manufactured automobiles, and contact began between the two companies. Then in 1950, Shotaro Kamiya proposed to Ford a technological tie-up but it ened in failure. During that time, both Eiji Toyota and Shoichi Saito (adviser to Toyota Motor Co., Ltd.) went to the U.S. and did technological research study.

Again in 1960, Toyota sounded out Ford on the establishment of a joint venture company, but it ended unsuccessfully. However, "exchange" continued on a scanty basis, such as, Ford's second generation toured Toyota's factories in June 1978.

Thus, Ford decided on a 25 percent capital participation in Toyo Kogyo in November 1979, and around that time, Toyota formed a project team for an advance into the U.S. The movement materialized the following year in January 1980, and on 29 January, Eiji Toyota attended the Japan-UK automobile conference in Acapulco, and on his return, inspected Ford's Pico Rivero plant (operations ceased on 10 January and shut down permanently on 8 February). Several days later, Chairman Masayuki Kato of Toyota Motor Sales Co., Ltd. also visited the plant.

On the other hand, at the end of February, Ford's investigative staff visited Japan and made inspection tours of Mitusbishi Motor Co., Ltd., Toyo Kogyo Motor Co., Ltd. and Isuzu Motors Limited and drew up a "top secret report" based on that. Both Toyota and Ford finally began to move.

On 8 April, Toyota announced to the effect it would make investigations for the construction of a factory in the U.S. and on the 17th, Nissan announced its advance into a U.S. factory. Subsequently, on 2 May at the Japan-U.S.

summit conference, President Carter requested local production of former Prime Minister Masayoshi Ohira, and also proposed an advance by means of the joint production formula.

In the middle of the month, USTR representative Askew visited Japan and launched talks with the government. He visited Toyota and requested a plant advance into the U.S. At the end of the month, Toyota opened its joint manufacturing and sales high level policy meeting, and at the meeting, President Eiji Toyota presented a memo outlining a cooperative system with Ford to top officials at or above the vice-president level. Based on this memo, he drew up a personal letter to Ford President Petersen. Then early in June, Mamoru Tanaka, executive director of Nippon Denso Co., Ltd., who visited Ford as a special envoy of Eiji Toyota, met Vice-president MacDougal and gave him the personal letter addressed to President Petersen. One week later, Toyota received a reply of acceptance to talks from Ford.

In the middle of the month, Vice-president Shigenobu Yamamoto of Toyota met with a high official at MITI and reported the opening of talks with Ford on joint production. On the 23rd, President Petersen visited Japan and held talks with Sumitomo Banka President Isoda and the next day, on the 24th, Petersen visited Toyota and held a secret meeting with Eiji Toyota and top officials. Later, Toyota went to Sumitomo Bank and had discussions with President Isoda.

Just as can be understood from the above, I think the particulars will become clear that Toyota chose Ford as its "fiance" as one measure for dealing with Japan-U.S. automobile friction which has been brought to political ground. Indeed, at present the positions of the one choosing and the one being chosen have become reversed.

Is The Culprit Of The Leak MITI Or LDP

Let's consider again the question at its origin

Because the shocking Toyota-Ford joint plan is still "only an agreement to talk about a tie-up," nothing concrete has been decided. Despite this, this clean slate "joint plan" was reported by NHK just as it was, a paper plan.

Since the contents were reported in rather detailed manner, it was obvious that someone involved revealed the information to NHK. Then, it is still a puzzle and a question who leaked this plan and for what purpose.

The first one that comes to mind is Ford. Then, it may be counterargued that the fact Ford appealed to the ITC is contradictory, but when it is considered from the angle in opposition to the aforementioned, it can be taken as a gesture to UAW. Indeed, it is totally possible that Ford, while acting as if it regards Japanese cars with enmity, would advance talks in terms of profitability.

On the other hand, it is thought that it would not be common sense for Toyota to reveal the plan since it is the designer of the plan. But if Toyota used the tie-up talks to buy time, it is possible the leak came from Toyota.

In the case of Sumitomo Bank and Toyo Kogyo, there was the fear they would be placed in the upper gallery in the Toyota-Ford talks and would be bypassed, and when the demerits of being left out in the cold are considered, publicly announcing the plan of these two companies at this juncture and appealing to the public for their own existence can be said to be one strategy. In that sense, there are elements indicating they are the ones who offered the information to NHK.

MITI and LDP were put on the rumor's chopping clock as the "culprits" of the leak. Political consideration of Japan-U.S. trade friction was reported as the basis. If viewed from the fact that the report was aimed at President Carter's visit to Japan, it is indeed a story with truth. There was one scene where the witty viewpoint was whispered that a deal was made as a condition for NHK's cooperation in the general election.

At any rate, a decision was made to impose regulations on automobile exports to the U.S., a political priority outrivaling the industry's dissatisfaction. Toyota caused the "miscarriage" of the joint venture plan with Ford. Whether by design or by accident, the Toyota-Ford tie-up drama ended being a "house of cards" just as was whispered from the very start.

There is no answer to the question whether the plan disintegrated as a result of rejection by the egos of these two large enterprises or was it an abortive flower which bloomed in a ravine of political priorities, but these were the backstage happenings in this quite unpleasant "Japan-U.S. automobile war."

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CSO: 4105/249

DEVELOPMENT OF ERS-1 SATELLITE TO BEGIN

Tokyo JPE AVIATION REPORT-WEEKLY in English No 538, 16 Sep 81 p 10

[Text]

Japan will start the development of the ERS-1 earth resources satellite, the GMS-3 geostationary meteorological satellite and the experimental H-1 liquid fuel two-stage rocket in FY 1982, according to a space development program put forward by the Space Activities Commission in late August.

The ERS-1 will be launched with the H-1 rocket around FY 1987. The Science & Technology Agency and the Ministry of International Trade and Industry, (which failed to get the ERS-1 development funded in FY 1981), have incorporated the development into their budget requests for FY 1982.

The GMS-3 will be launched in the summer of 1984 with the N-II rocket, while the experimental H-1 rocket will be test fired in FY 1985.

As for satellite launching programs for the near future, the commission has decided to delay the launching of the MOS-1 maritime observation satellite, originally planned for FY 1984, until late FY 1986 because it would take a long time to purchase parts for the satellite from the United States. It has also decided to postpone the National Aerospace Laboratory's (NAL) launching of the PLANET-A 10th scientific satellite and the ASTRO-C 11th scientific satellite until FY 1985 and 1986, respectively. The NAL had planned to lift the PLANET-A in FY 1984 and the ASTRO-C in FY 1985 with the M rockets.

CSO: 4220/16

MAJOR MILITARY R&D PROJECTS FOR FY 1982

Tokyo JPE AVIATION REPORT-WEEKLY in English No 538, 16 Sep 81 pp 7-10

[Text]

The JDA's Technical R&D Institute (TR&DI) in its budget request for FY 1982 has called for ¥16,886 million in FY 1982 expenditure and ¥34,631 million in disbursement from FY 1983 on, for research and development of new weapons systems.

Aircraft and Related Systems

The requested R&D funds include: ¥980 million in FY 1982 expenditure and ¥6,605 million in follow-on disbursement for four aircraft-related items--the MT-X new intermediate trainer (¥7,360 million, inclusive of ¥6,605 million in follow-on disbursement), the target drone (¥140 million), the aircraft system simulator (¥60 million) and the composite material structure for aircraft (¥30 million).

The MT-X funds are designed to finance detailed design work from FY 1982 to 1983 and partial fabrication in FY 1983 after basic design work, which is to start soon, with ¥1,900 million earmarked in the FY 1981 budget. The TR&DI is expected to request more than ¥30,000 million in FY 1983 to fabricate four prototypes for flight tests and two for fatigue tests in three years from the year. The first flight of the aircraft is planned for the end of FY 1985. Flight tests are scheduled to continue for two years.

Before the fabrication, the TR&DI will select the engine and systems aboard the new trainer. The engine's thrust is planned at 1.6 tons or more. The on-board systems will include communications equipment, the TACAN (tactical air navigation system) and other navigation system, the head-up display and test equipment.

As for the target drone, the TR&DI had originally intended to request ¥1,700 million for fabrication of a full system. The eventually-requested ¥140 million is planned for design work with the fabrication expected to be funded in FY 1983.

Guided Weapons

The TR&DI has set aside ¥9,635 million (¥1,526 million in FY 1982 expenditure and ¥8,109 million in follow-on disbursement) for eight guided weapon related R&D items.

The eight items are: the XSSM-1 ground-launched antiship missile (¥7,760 million), the Chu-MAT antitank missile (¥620 million), the air combat missile (¥540 million), the portable surface-to-air missile (¥260 million), the experimental rocket engine (¥50 million), the electronic scanning antenna for homing systems (¥120 million), the CDB (composite double base) rocket motor (¥50 million), and the precision guided simulator (¥235 million).

The XSSM-1 for the GSDF is based on the ASDF ASM-1 air-launched antiship missile. Since FY 1979, the propulsion system, homing head, inertial navigation system, rocket motor, and other key components have been fabricated. The XSSM-1 program will shift to the full-scale development phase with fabrication of a full system started in FY 1982. The new missile's development will be completed by FY 1987.

The Chu-MAT is designed as a replacement of the Model 64 MAT antitank missile. It will be smaller, lighter and more maneuverable than the Model 64. The TR&DI intends to complete its development by FY 1984 for service entry certification in FY 1985.

The electronic scanning antenna and the CDB rocket motor will be developed to increase homing and propulsion capabilities of the Tan-SAM short-range surface-to-air missile, which is to enter service in the current fiscal year.

The precision guided simulator will be used for testing image homing missiles. Its development has reached the final phase.

Military Electronics

The TR&DI has earmarked ¥5,734 million (¥1,565 million in FY 1982 expenditure and ¥4,169 million in follow-on disbursement) for 14 military electronics R&D items--five engineering development items, six research and fabrication items and three basic research items.

The five engineering development items are: the new antimortar radar (¥620 million), the TASS (towed array surveillance system) passive sonar (¥620 million), the XJ/ALR-1 ECM (electronic countermeasure) system (¥450 million),

the XJ/ALQ-5 ECM system (¥1,260 million) and the XJ/ALQ-8 ECM system (¥70 million).

The new antimortar radar will replace the current JAM/MPQ-NI. It will be capable of tracking multiple targets simultaneously. Integrated circuits (IC) will be used in the new radar instead of electronic tubes and its radar range will be expanded. The new radar will be mounted on vehicles for higher mobility.

Of the ECM systems, the ALQ-5 is planned for the C-1 transport and the ALQ-8 for the F-15J fighter-interceptor.

The six research and fabrication items are: the radar electronic warfare simulator (¥1,290 million), the infrared sensor (¥940 million), the secret communication system (¥170 million), the stationary magnetometer (¥110 million), the low-noise sonar dome (¥50 million), and the new mine detector (¥30 million). Top priority has been given to the radar electronic warfare simulator. The stationary magnetometer and the mine detector are new items.

The three basic research items are: the future fire-control system (¥80 million), the modular ECM system (¥30 million), and the radio wave absorber (¥30 million). The latter two are new items.

CSO: 4220/16

AIRCRAFT INDUSTRY LEADERS DISCUSS Y-XX

Tokyo JPE AVIATION REPORT-WEEKLY in English No 538, 16 Sep 81 pp 1,2

[Text]

Leaders of the Japanese aircraft industry met in Tokyo in early September, apparently to discuss how to select a foreign partner for the development and production of the Y-XX 150-seat-class commercial transport.

They are believed to have agreed to study three foreign aircraft development proposals in more detail before the final selection. The three aircraft proposed for Japan's Y-XX program are the MDF-100 of the McDonnell Douglas/Fokker group, the Boeing 7-7 of Boeing Co. and the A320 of Airbus Industrie. The Japanese study is expected to center on possible business arrangements for the international development of the proposed aircraft, Japan's shares in the development, the feasibility of the three programs, and Japan's participation in sales and product support activities.

A top-level meeting was held at the initiative of Civil Transport Development Corp. (CTDC). Participants include: Director-Consultant Gakuji Moriya and Managing Director Kenji Ikeda from Mitsubishi Heavy Industries Ltd., Chairman Zenji Umeda and Managing Director Teruaki Yamada from Kawasaki Heavy Industries Ltd.; Managing Director Iwao Shibuya from Fuji Heavy Industries Ltd.; and Chairman Eiichi Ohara, Vice Chairmen Kenji Uchino and Eiichi Yamaguchi, and Managing Director Reizo Wakasugi from CTDC.

They have also discussed a recommendation prepared by the Aircraft Committee of the Aircraft & Machinery Industry Council, an advisory body to the Ministry of International Trade and Industry, in August, which called for, among others, the private sector's takeover of the semigovernmental Nihon Aeroplane Manufacturing Co.'s business and the establishment of a new Japanese corporation to undertake production of the Boeing 767 (Y-X) after a development phase ending next year, according to a report.

CSO: 4220/16

NEW BODY TO BE SET UP FOR RJ500 PROGRAM

Tokyo JPE AVIATION REPORT-WEEKLY in English No 539, 23 Sep 81 p 1

[Text]

Ishikawajima-Harima Heavy Industries Co. (IHI), Kawasaki Heavy Industries Ltd. (KHI) and Mitsubishi Heavy Industries Ltd. (MHI), will soon set up a new non-profit organization for their joint program with Rolls-Royce Ltd. for the development of the RJ500 aircraft engine.

This move complies with a recommendation prepared by the Aircraft Committee of the Aircraft and Machinery Industry Council, an advisory body to the Ministry of International Trade and Industry (MITI), in August, which called on the three Japanese RJ500 program promoters to establish a new organization separately from corporations for development of airframes, pointing out that if a single corporation is engaged in development of both airframes and engines, it would be difficult for the corporation to sell other airframe manufacturers the engines. MHI and KHI manufacture airframes as well as engines.

So far, the three Japanese firms have proceeded with the RJ500 program nominally through the Engineering Research Association for Aerojet Engines.

The new non-profit corporation is tentatively named "the Nippon Jet Engine Kaihatsu Kyokai (Japan Jet Engine Development Corporation)." It will consist of 15 men initially and 30 in the spring of 1982. It will take over the firms' contracts with Rolls-Royce for the RJ500 program.

The new corporation will be headed by Taiji Ubukata, IHI President. Yoshifumi Harayama, Director of Electric Power Development Co., will be appointed Managing Director. Harayama has served as member of the Bank of Japan Policy Board as well as a ranking MITI official.

CSO: 4120/15

KHI OFFICIALLY NAMED MT-X PRIME CONTRACTOR

Tokyo JPE AVIATION REPORT-WEEKLY in English No 539, 23 Sep 81 pp 1-3

[Text]

The Japanese Defense Agency (JDA) has officially named Kawasaki Heavy Industries Ltd. (KHI) as prime contractor and Mitsubishi Heavy Industries Ltd. (MHI) and Fuji Heavy Industries Ltd. (FHI) as subcontractors for the development and production of the MT-X new intermediate trainer aircraft for the Air Self-Defense Force (ASDF).

Shares of the MT-X development program are about 40 percent for KHI and about 30 percent each for MHI and FHI. An MT-X engineering team, which will start basic design work in October, will consist of 40 to 50 engineers from KHI, about 30 each from MHI and FHI, and several of each from Shin Meiwa Industry Co., Japan Aircraft Mfg. Co. and other airframe manufacturers. Its chief engineer will be, F. Isozaki, of KHI's aircraft division.

KHI as prime contractor will develop the front fuselage section, assemble the full system, and conduct flight tests. The middle and rear fuselage sections are set aside for MHI, and the main wing and nose for FHI. Among other sections, the landing gear may be developed by Sumitomo Precision Products Co., sections below the wing by Japan Aircraft Mfg., the drop tank by Shin Meiwa, the engine by Ishikawajima-Harima Heavy Industries Co. (IHI), and the ejection seat by Daisel Ltd.

Airframe parts may be produced by Teijin Seiki Co., Kayaba Industry Co., and Shinko Electric Co. In addition, Mitsubishi Electric Corp., Nippon Electric Co., Toshiba Corp., Japan Aviation Electronic Industry Co., Shimadzu Corp., Tokyo Keiki Co., Tokyo Aircraft Instrument Co., Hokushin Electric Works Ltd., and others will take part in production of components for installment on the new trainer.

The ASDF's major MT-X requirements are the total weight of about 5.5 tons, two 1.66-ton-thrust turbofan engines, the

maximum speed at Mach 0.9, the maximum climb rate at about 10,000 feet per minute and the flight range at 700 nautical miles. Priority is given to the speed, climb rate, flight range and maneuverability.

The maximum climb rate has been set at that level for the reason that MT-X trainers departing from Ashiya and Hamamatsu ASDF bases must fly at an altitude of 7,500 feet before reaching training spaces over the sea and ascend sharply up to an altitude of 20,000 to 25,000 feet in the training spaces in order to avoid commercial air routes.

As to the flight range, the MT-X without an auxiliary fuel tank is required to outstrip the current T-1 and T-33 trainers with such tanks. Even with auxiliary fuel tanks, the T-1 and T-33 can engage in only short-time training, because training spaces are far away from the coast.

The MT-X's maneuverability will be superior to that of the F-86F known as a leading postwar fighter. The ASDF is considering using the highly maneuverable new trainers for an acrobatic team in the future.

Although the MT-X will not be used for combat training initially, its wing and fuselage will be designed to enable such training. Optional components for combat training include the gun pod, the bomb and missile launcher, the bomb rack, and the head-up display linked to the fire control system.

The head-up display was included in MT-X proposals of KHI, MHI, and FHI. But whether to install the display in the development phase is uncertain because cost control is given priority.

Apart from the combat training mission, the MT-X is planned to engage in not only basic pilot training, but also other missions such as; liaison flights, training support (target towing and electronic countermeasure training), collection of radioactive dust, high-altitude meteorological observation, TPC training, GAT check, flight check, and acrobatic flights. Therefore, five points of the MT-X airframe are designed to accommodate towed targets, and various pods for ECM systems, chaff dispensers, GAT check equipment, meteorological observation systems and dust collectors. Two 150-galon drop tanks can also be mounted on the aircraft.

The JDA is expected to purchase about 200 MT-X trainers to cover all of these multiple missions.

CSO: 4120/15

IHI EAGER TO GET XF-3 ADOPTED FOR MT-X

Tokyo JPE AVIATION REPORT-WEEKLY in English No 539, 23 Sep 81 pp 3,4

[Text]

Ishikawajima-Harima Heavy Industries Co. (IHI) has strengthened its setup for the development of the XF-3 small turbofan engine to get the engine adopted for the ASDF MT-X new-generation intermediate trainer because the JDA has officially selected MT-X airframe contractors with basic design work funded under the FY 1981 budget.

It is now proceeding with fabrication of five XF-3-30 prototypes for various tests under a contract with the JDA's Technical R&D Institute (TR&DI). The fabrication work has been speeded up prior to delivery of the first of the five prototypes to the TR&DI in October.

The JDA is expected to select the MT-X engine by the autumn of 1982. Besides the XF-3, some foreign engines such as the Larzac, are considered as condidates.

The TR&DI/IHI XF-3 project started in FY 1977 with fabrication of the XF-3-1 and -20 prototypes. IHI intends to make utmost efforts to make the XF-3 meet the MT-X engine requirements so that it will be adopted for the new trainer.

CSO: 4120/15

TR&DI ENDS INITIAL TESTS ON SCOUT/WARNING APC

Tokyo JPE AVIATION REPORT-WEEKLY in English No 539, 23 Sep 81 pp 7,8

[Text]

The Technical R&D Institute (TR&DI) of the JDA has completed initial tests on the scout/warning wheeled armored personnel carrier (APC) for the GSDF, confirming almost all performance requirements for the new vehicle have been met.

In the next phase of the scout/warning APC development program, the GSDF will prepare details of an operation scheme for the new vehicle and study a 20mm machine gun to be mounted on it prior to the TR&DI's fabrication of a full system and the JDA's service entry certification. As for the full-scale fabrication, the TR&DI had sought funding in FY 1982. But the JDA has turned down this request with priority attached to development of a new main battle tank and a new antiaircraft gun.

The TR&DI has been engaged in development of the command/communications wheeled APC as well as the scout/warning vehicle. The same chassis is used for the two wheeled APCs. The command communications APC has been prepared for deployment starting in FY 1982.

Specifications of the scout/warning APC under development follow: Weight: about 13.95 tons. Length: about 5.37 meters. Width: about 2.48 meters. Height: about 2.48 meters. Maximum speed: about 100 kilometers per hour. Chassis structure: three axes and six wheels. Weapons systems: a 20mm machine gun and a 7.62 machine gun. Crew: five men. Powerplant: 300-horsepower four-cycle water-cooled diesel engine.

CSO: 4120/15

FULL-SCALE AW-X DEVELOPMENT TO BE LAUNCHED IN FY 1982

Tokyo JPE AVIATION REPORT-WEEKLY in English No 539, 23 Sep 81 p 8

[Text]

The TR&DI has set aside ¥5,460 million in its FY 1982 budget request for starting full-scale fabrication of the AW-X new antiaircraft machine gun for the GSDF in the fiscal year.

The AW-X, consisting of the Model 74 tank chassis and the Swiss Oerlikon 35mm KDE gun, will be used for air defense of GSDF divisions along with short-range and portable surface-to-air missiles.

The AW-X research and development program started in FY 1978. So far, the TR&DI has fabricated the fire control system and experimentally mounted the 35mm gun on the Model 61 tank chassis. But the Model 61 tank chassis was found to have problems regarding mobility, load capacity and other aspects. This led to the adoption of the Model 74 tank chassis.

The TR&DI intend to complete the AW-X development by FY 1987, although coordination would be necessary between the AW-X and new tank development programs. The GSDF plans to purchase a total of 120 AW-X guns.

CSO: 4120/15

SCIENCE AND TECHNOLOGY

¥86,700 MILLION REQUESTED FOR SPACE DEVELOPMENT IN FY 1982

Tokyo JPE AVIATION REPORT-WEEKLY in English No 539, 23 Sep 81 pp 8, 9

[Text]

The Science & Technology Agency has drafted its FY 1982 budget request totaling ¥368,270 million, up 4.5 percent over FY 1981, including ¥86,780 million for space development and ¥9,433 million for aircraft research and development. The request also calls for ¥139,187 million in disbursement from FY 1983 on.

Of the space development funds, the agency earmarks ¥33,984 million for development and launching of satellites, ¥35,565 million for development of satellite launching rockets and ¥1,326 million for research into space development technology. It notes in the budget request that Japan should promote development of rockets, as well as satellites, for meteorological observation, maritime observation, earth resources exploration, communications, broadcasting and other uses. Most of the space development funds will be allocated to the National Space Development Agency (NASDA).

The aircraft research and development funds include ¥6,239 million for the development of a low-noise short take-off and landing (STOL) aircraft which could become a mainstary airliner for future local aviation. In FY 1982, the agency's National Aerospace Laboratory plans to go ahead with fabrication of an experimental STOL aircraft, a flight simulator, and other necessary equipment.

The agency also requests ¥5,531 million in disbursement from FY 1983 on, for the STOL program. The experimental aircraft will be completed in FY 1983.

CSO: 4120/15

PARTNER FOR Y-XX PROGRAM TO BE SELECTED BY NOVEMBER

Tokyo JPE AVIATION REPORT-WEEKLY in English No 540, 30 Sep 81 pp 1-3

[Text]

The Japanese aircraft industry intends to select a foreign partner for the development of the Y-XX 150-seat commercial transport by the end of November.

The Y-XX special committee of the Society of Japanese Aerospace Companies has set up a working group, headed by Hirokatsu Isshiki, Manager of Mitsubishi Heavy Industries Ltd.'s Third Aircraft Division. The committee will prepare a concrete policy on the international Y-XX development for final negotiations, starting in October, with candidates for the partner prior to the selection. Among the candidates, the Boeing Co. and the Fokker/McDonnell Douglas Corp. (MDC) group have proposed specific aircraft development programs for Japan's Y-XX project. Airbus Industrie, another candidate, is also expected to make a specific proposal for joint development, with Japan, of the A320 as the Y-XX project quite soon.

The partner selection schedule was decided at a top-level meeting of the industry in early September. The schedule also calls on the industry to consult with the Ministry of International Trade and Industry (MITI) on concrete policy and to study the world's aircraft market trends before the selection.

The industry has set the selection deadline for the end of November, apparently in consideration of intra-government negotiations on the FY 1982 (April 1982-March 1983) budget, which is expected to fund subsidies for the Y-XX program. But the selection could be delayed beyond the deadline, depending on the timing of Airbus Industrie's presentation of a specific proposal.

Japanese industry has so far put forward a tentative policy on the international aircraft development program at preliminary negotiations with the candidates. It is now essential to set a concrete policy on the basis of Boeing's 7-7 and the Fokker-MDC group's MDF-100 programs proposed in August.

Aircraft sections which the Japanese want to develop in the international program are a key point of the policy. Although the Japanese have undertaken development of fuselage sections in the Japan-Boeing-Italy 767 (Y-X) program, they are eager to take charge of the main wing in the Y-XX program under a long-term strategy to penetrate the world's aircraft market on a full-scale basis. The Fokker-MDC group has invited the Japanese to take charge of the MDF-100's main wing, excluding the center wing box, flap and aileron, while Boeing has indicated its readiness to accept Japanese development of the 7-7's main wing. If the Japanese successfully take charge of the main wing, it would be easy for the industry to receive subsidies for the program from the government, which favors early advancement of the industry.

However, some industry quarters have noted that the Japanese would have to make massive investments in plant and equipment to take charge of the main wing, increasing their financial risks in the program. These quarters have recommended that the Japanese make effective use of existing technologies and equipment for the 767 program to minimize new investments. In that case, whether the government would appropriate subsidies would be a problem. The industry considers the subsidies as indispensable for the Y-XX program, estimated to cost ¥300,000 million. The subsidy matter would eventually depend on the industry's negotiations with MITI.

Another key factor in the policy on the Y-XX program is how much of a share the Japanese should seek in the joint program. This is an important matter because the Japanese are to take part in sales and product support activities as well as the development phase.

CSO: 4120/18

SJAC TO SET UP THREE AD HOC COMMITTEES

Tokyo JPE AVIATION REPORT-WEEKLY in English No 540, 30 Sep 81 p 3

[Text]

The Society of Japanese Aerospace Companies has decided to set up three ad hoc survey committees on commuter aircraft, the Japanese aerospace industry's computer utilization, and the space industry. All these three committees will prepare survey reports on these subjects by the end of the current fiscal year in March 1982.

The commuter aircraft committee will study the world's current commuter aircraft market, the Japanese market, their potential for future development, and the Japanese industry's policy on such aircraft.

The computer utilization committee will conduct a survey on the Japanese aerospace industry's future promotion of computer uses. Specific survey subjects are computer utilization in the European and American aerospace industries, the current conditions and problems of the Japanese industry's computer utilization, the Japanese industry's demand for computers and computer technology development, and how best to utilize computers in the Japanese industry in the 1990s.

The space industry committee will look into the Japanese space industry's international competitiveness to project the future market for the industry. Specific survey items include production and marketing of space equipment and parts in Japan and other industrial countries, exports and imports of such products in foreign countries, the Japanese space industry's strategy on production of these products, and the Japanese industry's FY 1981 performance.

CSO: 4120/18

MT-X DEVELOPMENT SCHEDULE GIVEN

Tokyo JPE AVIATION REPORT-WEEKLY in English No 540, 30 Sep 81 pp 8-10

[Text]

The Japanese aircraft industry will launch development of the MT-X new intermediate trainer aircraft for the ASDF, with work on the basic design starting in October.

At the end of the basic design work phase in October or November 1982, an avionics configuration will be determined, with selection of individual avionics systems, including the head-up display.

The basic design work will be followed by work on the detailed design, ending in March 1984. Fabrication of prototypes will start in FY 1983. The first prototype will be completed in the latter half of FY 1984 for flight tests beginning in the first half of FY 1985. Completion of the MT-X development work is expected by the end of FY 1987.

Details of the projected MT-X development schedule follow:

October 1981-October 1982: Work on the basic design of aerodynamic characteristics, structure and configuration for examination in March 1983.

October 1981-March 1983: Tests related to the basic design.

July 1982-March 1984: Tests related to the detailed design.

April 1982-March 1983: design, fabrication and tests of a full-size mockup.

April 1983-March 1986: Tests of prototypes.

October 1981-March 1984: Release of scheme drawings, to to start in October 1982, and release of manufacture drawings in April 1983.

October 1981-October 1982: Preparation of material supply plans and implementation of initial work plans.

October 1982-March 1983: Preparation for ordering materials from April 1983 to November 1984.

April 1983-February 1985: Fabrication and delivery of 16 engines for flight tests and four reserve engines.

April 1983-November 1984: Design and manufacture of machine tools.

June 1983-February 1985: Manufacture of the first and second lot components.

December 1983-October 1984: Assembly of the 01 preliminary prototype for static fatigue tests from October 1984 to November 1986.

March 1984-February 1985: Assembly of the second prototype for ground tests in April-July 1985 and flight tests in July 1985-January 1986 before delivery.

August 1984-June 1985: Assembly of the third prototype for ground tests in June-August 1985 and flight tests in August 1985-February 1986 before delivery.

October 1984-July 1985: Assembly of the fourth prototype for ground tests in July-September 1985 and flight tests in September 1985-March 1986 before delivery.

December 1984-July 1985: Assembly of the 02 preliminary prototype to conduct fatigue tests in July 1985-October 1987.

November 1985-March 1988: Technical and operational tests of the four prototypes.

CSO: 4120/18

DEFENSE MAY ACHIEVE 63.9 PERCENT OF AIRCRAFT FUNDING TARGET BY FY 1982

Tokyo JPE AVIATION REPORT-WEEKLY in English No 538, 16 Sep 81 2-4

[Text]

The Japanese Defense Agency (JDA) could achieve 63.9 percent of its aircraft funding target stipulated in the FY 1980-84 Medium-Term Defense Program (MTDP) by FY 1982, if the 136 aircraft are approved in the next fiscal year as requested. The Ground Self-Defense Force (GSDF) could achieve 53.8 percent, the Maritime Self-Defense Force (MSDF) 50.7 percent and the Air Self-Defense Force (ASDF) 83.6 percent.

A breakdown of the MTDP aircraft funding target, FY 1980-81 funding and FY 1982 request is as follows:

	MTDP target (A)	FY '80 funding	FY '81 funding	FY '82 request	sub total (B)	Target achievement ratio (B)/(A)	Remainder (A)-(B)
GSDF							
AH-1S	22	-	-	22	22	100%	0
OH-6D	55	10	8	6	24	43.6	31
HU-1H	42	5	5	7	17	40.4	25
V-107	1	1	-	-	1	100.0	0
CH-X	2	-	-	-	-	-	2
LR-1	6	2	1	1	4	66.6	2
TL-1	2	2	-	-	2	100.0	0
sub total	130	20	14	36	70	53.8	60

	MTDP target (A)	FY '80 funding	FY '81 funding	FY '82 request	sub total (B)	Target achievement ratio (B)/(A)	Remainder (A)-(B)
MSDF							
P-3C	37	10	-	17	27	72.9%	10
US-1	2	1	-	-	1	50.0	1
TC-90	16	2	4	3	9	56.2	7
KM-2	4	-	1	2	3	75.0	1
Training support aircraft	3	-	-	-	-	-	3
HSS-2B	46	2	6	11	19	41.3	27
SH-X	2	-	-	-	-	-	2
RH-X	6	-	-	-	-	-	6
S-61A	8	0	1	4	5	62.5	3
OH-6D	6	-	-	2	2	33.3	4
sub total	130	15	12	39	66	50.7	64
ASDF							
F-15J/DJ	77	34	-	43	77	100.0	0
F-1	13	3	2	3	8	61.5	5
E-2C	4	-	4	-	4	100.0	0
C-130H	12	-	2	4	6	50.0	6
T-2	23	4	6	7	17	73.9	6
T-3	6	6	-	-	6	100.0	0
MU-2	5	1	1	2	4	80.0	1
V-107A	6	2	2	2	6	100.0	0
H-X	7	-	-	-	-	-	7
sub total	153	50	17	61	128	83.6	25
Total	413	85	43	136	264	83.9	149

CSO: 4220/16

MSDF SHIPBUILDING PROGRAMS REPORTED

Tokyo JPE AVIATION REPORT-WEEKLY in English No 538, 16 Sep 81 pp 5-7

[Text]

The MSDF has requested funding of four 2,900-ton DD destroyers and one 1,400-ton DE escort destroyer as well as other ships in FY 1982 to achieve 68.8 percent of its 16-destroyer funding target fixed in the FY 1980-84 MTDP.

The target consists of two 4,500-ton DDG guided-missile destroyers, 10 2,900-ton DDs and four 1,400-ton DEs. FY 1980-81 funding covered one DDG, four DDs and one DE. If all the requested five are approved in FY 1982, the MSDF would request the remaining five--one DDG, two DDs and as many DEs--in FY 1983 to accomplish the target one year ahead of schedule.

The MSDF plans to build DDGs and DDs for four escort flotillas. The two DDGs in the FY 1980-84 MTDP are designed for the third flotilla and 10 DDs for the second and third ones. DEs will be deployed for regional fleets to replace patrol combatants.

The MSDF has also requested ¥18,773 million for its fleet rehabilitation and modernization (FRAM) program in FY 1982. The funds comprise ¥6,692 million for modification of the 3,000-ton Takatsuki DDA antiair destroyer and purchase of weapons systems for the Kikuzuki of the similar class. The current MTDP visualizes four Takatsuki-class DDAs and two 4,700-ton Haruna-class DDH helicopter-carrying destroyers for the FRAM.

In FY 1981, ¥9,657 million was earmarked for weapons systems to be installed on the modified Takatsuki. Funding of weapons systems usually precedes that of modification work because modification must coincide with acquisition of weapons systems.

Under the FRAM program, the current DASH (drone anti-submarine helicopter) and 5-inch gun on the DDA will be replaced by the Harpoon surface-to-surface missile, Sea Sparrow surface-to-air missile and 20mm CIWS gun. Part of the electronic systems will also be modernized.

A breakdown of the MSDF's shipbuilding and FRAM programs under the FY 1980-84 MTDP is as follows:

Ship-building	MTDP target (A)	FY '80 funding	FY '81 funding	FY '82 request	sub total (B)	Target achievement ratio (B)/(A)	Remainder (A)-(B)
4,500-ton DDG	2	-	1	-	1	50.0%	1
2,900-ton DD	10	2	2	4	8	80.0	2
1,400-ton DE	4	1	-	1	2	50.0	2
sub total	16	3	3	5	11	68.8	5
2,200-ton SS	5	1	1	1	3	60.0	2
440-ton MSC	11	2	2	2	6	54.5	5
250-ton PG	1	-	-	1	1	100.0	0
500-ton LSU	2	-	-	-	-	0.0	2
1,100-ton AGS	2	-	-	1	1	50.0	1
3,600-ton AS	1	-	1	-	1	100.0	0
5,000-ton AOE	1	-	-	-	-	0.0	1
Total	39	6	7	10	23	59.0	16

FRAM	MTDP target (A)	FY '80 funding	FY '81 funding	FY '82 request	sub total (B)	Target achievement ratio (B)/(A)	Remainder (A)-(B)
3,000-ton DDA	4	-	1	1	2	50.0%	2
4,700-ton DDH	2	-	-	-	-	0.0	2
Total	6	-	1	1	2	33.3	4

CSO: 4220/16

ASDF/MCDONNELL DOUGLAS F-4EJ MODERNIZATION PROGRAM OUTLINED

Tokyo JPE AVIATION REPORT-WEEKLY in English No 538, 16 Sep 81 p 4

[Text]

The ASDF has decided to install the Westinghouse APG-66 radar for the F-16 and other new systems on the F-4EJ fighter-interceptor to improve its performance. The Hughes APG-65 for the F-18 had also been studied as a candidate.

All the other new systems, expect the head-up display, will be the same as those for the F-15J. They include: the inertial navigation system, the IFF (identification, friend or foe) system and the rear warning radar.

The ASDF plans to experimentally modify an F-4EJ with these new systems used from FY 1982 to 1983. It has earmarked ¥9,850 million in its FY 1982 budget request for the experimental modification. The modified aircraft will be tested in FY 1984 and 1985 before the final adoption of the new systems.

The service intends to modify 100 F-4EJs or 20 aircraft per year from FY 1986 to 1990.

The modification will modernize the F-4EJ's fire-control system (FCS) with the look-down capability given. It will enable the aircraft to be armed with advanced weapons systems such as the AIM-9L Sidewinder, AIM-7F Sparrow air-to-air missiles and the ASM-1 antiship missile. IFF and rear warning capabilities will also be improved.

CSO: 4220/16

MILITARY

JDA TO STUDY PATRIOT, NIKE PHOENIX AS SAM-X

Tokyo JPE AVIATION REPORT-WEEKLY in English No 539, 23 Sep 81 p 4

[Text]

The JDA plans to conduct full-scale study from FY 1982 to 1983 on the U.S. Army/Raytheon Patriot and the Mitsubishi Heavy Industries-proposed Nike Phoenix as condidates for the SAM-X next-generation surface-to-air missile to replace the GSDF Hawk and the ASDF Nike-J.

It wants to start the SAM-X procurement program in FY 1984 on the basis of the study.

It has requested ¥500 million for a survey on the Patriot in FY 1982. In the survey, it will commission the U.S. Army to examine Japan's possible purchasing of the Patriot and conduct a joint study with the Americans on purchasing costs and other matters.

As to the Nike Phoenix, a mixture of the Nike and the Hughes Phoenix air-to-air missile for the U.S. Navy/Grumman F-14 fighter, the JDA's TR&DI will collect up-to-date data on the missile to determine whether it could be adopted as the SAM-X. The JDA has earmarked ¥20 million for the Nike Phoenix study in the FY 1982 budget request.

CSO: 4120/15

GSDF TO ATTACH PRIORITY TO TANKS, GUNS IN NEW MTDP

Tokyo JPE AVIATION REPORT-WEEKLY in English No 539, 23 Sep 81 pp 4,5

[Text]

The Ground Self-Defense Force (GSDF) is expected to give purchasing priority to tanks, artillery, and antitank and antiaircraft weapons under the new FY 1983-87 Medium-Term Defense Program (MTDP) to build up its combat capabilities. The new MTDP will be drafted by the end of the current fiscal year, or March 1982.

The priority weapon items include the Model 74 tanks, the Model 75 155mm self-propelled howitzer (HSP), the 203mm HSP, the Model 75 130mm SSR self-propelled multi-barreled rocket launcher, the 155mm towed howitzer, the Model 79 surface-to-surface missile (SSM), the 84mm recoilless gun, the Chu-MAT medium-range antitank missile, the short-range and portable surface-to-air missiles (SAM), and the new AW-X antiaircraft machine gun.

In addition to the weapons systems' purchase, the GSDF intends to reorganize Army divisions to improve their combat readiness.

The GSDF is expected to order 80 Model 74 tanks every year as planned for FY 1982. In that case, it will be able to achieve the authorized target inventory for the Model 74 tanks by FY 1984 or the last year of the current five-year MTDP. Therefore, it is considering raising the target inventory for continued Model 74 purchasing until new tanks enter service around FY 1988.

As for artillery, the GSDF plans to launch purchase of 155mm towed howitzers in the first year of the new MTDP. It intends to order seven for training in the initial year and more in the subsequent years to replace the current 105mm and 155mm howitzers at an annual pace of one artillery unit.

The GSDF plans to purchase 155mm HSPs and 130mm SSRs at the same annual pace as in the current MTDP. On 203mm HSPs, it may aim at organizing 1.5 units under the new MTDP.

Among antitank weapons, Model 79 SSMs may be purchased at an annual rate of eight sets for one unit. The 84mm recoilless gun purchase may be speeded up with domestic license production started. The Chu-MAT antitank missile, now under development, could enter service under the FY 1983-87 MTDP.

As for antiaircraft weapons, the GSDF intends to continue purchase of short-range and portable SAMs under the new MTDP. The AW-X antiaircraft gun, now under development, may be incorporated into the new program. But its service entry is expected to be virtually realized under the FY 1986-90 MTDP.

CSO: 4120/15

JDA TO ORDER 68 WHEELED APC'S BY FY 1984

Tokyo JPE AVIATION REPORT-WEEKLY in English No 539, 23 Sep 81 pp 5,6

[Text]

The JDA plans to order 68 command/communications wheeled armored personnel carriers (APC) for the GSDF by FY 1984. It has already requested ¥1,024 million to be approved under the FY 1982 budget for the first 13 units, expecting the remaining 55 units to be funded in FY 1983 and 1984.

It has requested funding of 50 155mm and 19 203mm self-propelled howitzers, as well as the wheeled APCs, in FY 1982 to improve the mobility of GSDF units. The wheeled APCs, with command and communications officers aboard, will act together with these self-propelled guns for highly-mobile operations.

The APCs, priced at slightly less than ¥80 million per unit, will be produced domestically. Komatsu Ltd. is expected to be named the prime contractor for the production, although Mitsubishi Heavy Industries Ltd. is also eyeing the deal.

CSO: 4120/15

KOMATSU LIKELY TO UNDERTAKE 203MM HSP LICENSE PRODUCTION

Tokyo JPE AVIATION REPORT-WEEKLY in English No 539, 23 Sep 81 p 6

[Text]

The JDA is expected to name Komatsu Ltd. as prime contractor for license production of the 203mm self-propelled howitzer (HSP) for the GSDF by the end of September. But Mitsubishi Heavy Industries Ltd. (MHI) and Hitachi Ltd. may participate in the production as subcontractors.

The JDA intends to have the 203mm HSP produced by domestic manufacturers, but the gun barrel and engine will be imported from the United States. Although it has nominated Japan Steel Works Ltd. as manufacturer of the turret, it has yet to select the prime contractor for production of the chassis and assembly of the full system. It has requested Komatsu and MHI to submit proposals for the chassis production, though Hitachi as well as the two firms had hoped to undertake the production. Indications are that the JDA wants to have the three companies jointly undertake the production with Komatsu serving as prime contractor.

In the FY 1982 budget request, the JDA has sought 12 203mm HSPs for front-line units after those for training funded in FY 1981.

CSO: 4120/15

MILITARY

MSDF TO ADOPT MK-46 TORPEDO FOR P-3C

Tokyo JPE AVIATION REPORT-WEEKLY in English No 539, 23 Sep 81 pp 6,7

[Text]

The MSDF is believed to have decided on the adoption of the U.S. Navy MK-46 short-range torpedo for the P-3C anti-submarine patrol aircraft. It has incorporated funding of the torpedoes into its FY 1982 budget request.

Its negotiations with the United States are now under way on details of Japan's license production of the torpedo. The U.S. Navy has reportedly agreed to release the torpedo for Japan's license production.

The MSDF has been developing the improved version of the Model 73 torpedo for the P-3C because the MK-46's adoption had earlier been seen as difficult.

Irrespective of the MK-46's adoption, the MSDF wants the development of the improved Model 73 to be continued. It could purchase both the MK-46 and the improved Model 73 for the P-3C in the future.

CSO: 4120/15

MILITARY

MSDF TO ACQUIRE FIRST NEW DD DESTROYER IN MARCH 1982

Tokyo JPE AVIATION REPORT-WEEKLY in English No 539, 23 Sep 81 p 7

[Text]

The Maritime Self-Defense Force (MSDF) will take delivery of the 2,900-ton Hatsuyuki, the first new DD destroyer, in March 1982, which started full-scale test operation in September.

The new DD, the core of a sophisticated escort flotilla, will be equipped with the Sea Sparrow surface-to-air missile and the Harpoon surface-to-surface missile, It will also be equipped with an HSS-2B antisubmarine helicopter. The MSDF plans to form four DD-led sophisticated escort flotillas.

Its powerplant consists of the Rolls-Royce/KHI Olympus TM3B gasturbine engine for boosting and the RM1C Tyne for cruising.

The first all-gasturbine Japanese warship, Hatsuyuki, built by Sumitomo Heavy Industries Ltd., has smoothly run in the past tests as expected, according to the shipbuilder's interim report.

CSO: 4120/15

U.S. AGREES TO SUPPLY COUNTRY WITH F-15 TECHNICAL DATA

Tokyo JPE AVIATION REPORT-WEEKLY in English No 540, 30 Sep 81 pp 3-4

[Text]

The United States has agreed to supply Japan with the McDonnell Douglas F-15 fighter's technical data, excepting radar, and partial overhauling technology for F-15 components not subject to Japan license production.

The agreement came when two officials of the Japanese Air Self-Defense Force (ASDF) negotiated with American officials in the United States from June 14 to July 4 to increase Japan's license production content for the F-15, which the ASDF has already started to introduce as new equipment.

The Americans also approved Japan's license production of some engine parts and auxiliary power units for the aircraft. But they declined to release data on Japanese-requested major components, including the APG-63 radar hardware, for Japan's license production. They have been cautious in expanding foreign countries' license production content for the F-15, which is one of the most sophisticated weapons systems of the United States, although Japan has so far been allowed to produce about one-half of the F-15 components in terms of value.

At the latest license production negotiations, the Japanese asked the Americans to release not only the APG-63 radar hardware but also partial radar software, parts of the ASN-109 inertial navigation system, the IFF (identification, friend or foe) system, the engine air inlet controller, the fuel unit control, the engine electric control, the fuel pump and other components.

The Japan Defense Agency intends to continue the F-15 license production negotiations with the United States in FY 1982 and subsequent years to increase the license production content as much as possible, because it plans to procure about 80 F-15s in addition to the authorized 100 aircraft.

CSO: 4120/18

JDA'S AIRCRAFT ORDERING PROGRAM FOR FY '82

Tokyo JPE AVIATION REPORT-WEEKLY in English No 540, 30 Sep 81 pp 4-6

[Text]

The Japan Defense Agency has sought a total of 136 aircraft worth ¥774,646 million for the three services in its FY 1982 budget request.

Funds for three priority types of aircraft are planned for five-year disbursement. These aircraft are the AH-1S antitank helicopter for the Ground Self-Defense Force (GSDF), the P-3C antisubmarine patrol aircraft for the Maritime Self-Defense Force (MSDF).

Funds for the ASDF's F-1 support fighter and T-2 advanced trainer may be disbursed in four years, while those for the MSDF's HSS-2B antisubmarine and S-61A rescue helicopters and the ASDF's C-130H transport may be appropriated in three years.

Planned for two-year disbursement are funds for the GSDF's OH-6D observation helicopter, HU-1H multi-mission helicopter and LR-1 liaison/reconnaissance aircraft; the MSDF's KM-2 trainer, TC-90 instrument flight trainer and OH-6D observation helicopter; and the ASDF's MU-2 search/rescue aircraft and V-107A search/rescue helicopter.

Acquisition schedules for the 136 aircraft follow:

ASDF

F-15J/DJ (43 aircraft worth ¥450,650 million) : Twenty-three DJs) in FY 1985 and 20 in FY 1986. Of the 43 planes, 19 are planned for deployment at fighter-interceptor squadrons. Eleven are reserves for squadrons and the remaining 13 are for replacement of retiring aircraft. The 43 planes are the last installment of the 100 aircraft authorized by the National Defense Council to replace four F-104J squadrons.

F-1 (three aircraft worth ¥6,970 million) : One in FY 1984 and two in FY 1985. All three are reserves to replace retiring aircraft by FY 1985.

C-130H (four aircraft worth ¥22,985 million) : All four in FY 1984. They are the second installment of the 12 aircraft for funding under the FY 1980-84 defense program. Two were funded in FY 1981. The remaining six will be incorporated into an FY 1983 budget request.

T-2 (seven aircraft worth ¥16,498 million) : Five in FY 1984 and two in FY 1985. Of the seven, three are planned for F-1 squadrons and four for reserves to replace retiring aircraft by FY 1985.

MU-2 (two aircraft worth ¥1,062 million) : Both in FY 1983. They are planned for a new rescue squadron to be set up in Akita at the end of FY 1983.

V-107A (two aircraft worth ¥2,757 million) : Both in FY 1983, also planned for the new Akita rescue squadron along with the MU-2s.

GSDF

AH-1S (22 aircraft) : Six in FY 1984 and eight each in FY 1985 and 1986.

OH-6D (six aircraft) : All six in FY 1983.

HU-1H (seven aircraft) : All seven in FY 1983.

LR-1 (one aircraft) : One in FY 1983.

MSDF

P-3C (17 aircraft) : Seven in FY 1985 and 10 in FY 1986.

KM-2 (two aircraft) : Both in FY 1983.

TC-90 (three aircraft) : All three in FY 1983.

HSS-2B (11 aircraft) : All 11 in FY 1984.

S-61A (four aircraft) : All four in FY 1984.

OH-6D (two aircraft) : Both in FY 1983.

CSO: 4120/18

ASDF REQUESTS SECOND F-15 SIMULATOR

Tokyo JPE AVIATION REPORT-WEEKLY in English No 540, 30 Sep 81 pp 6-7

[Text]

The ASDF seeks a second F-15 flight simulator worth some ¥3,000 million in its FY 1982 budget request. The first simulator, funded in FY 1979, is now under construction by Mitsubishi Precision Co. for delivery in March 1982. The firm has been licensed by Goodyear Aerospace Corp. to produce the F-15 simulator.

The ASDF plans to procure three F-15 simulators to cover three ASDF bases to be equipped with a total of 100 F-15J/DJ fighter-interceptors. The first simulator is bound for Nyutabaru Base and the second for Chitose Base.

The service intends to procure F-15J/DJ aircraft beyond the authorized 100 planes. In that case, one more simulator could be purchased with another ASDF base named to accommodate F-15Js/DJs.

The ASDF also plans to acquire a flight simulator for the Lockheed C-130H tactical transport because the first two of these aircraft have been funded under the FY 1981 budget. It has earmarked ¥380 million in the FY 1982 budget request for design work on the simulator. Funds for manufacture may be incorporated into a FY 1983 budget request for acquisition at the end of FY 1984.

The C-130H simulator is also expected to be built by Mitsubishi Precision, which already has a technical cooperation contract with Singer General Precision, the original manufacturer of the C-130H simulator.

CSO: 4120/18

MILITARY

JDA TO ADOPT PATRIOT AS SAM-X BY FY '83

Tokyo JPE AVIATION REPORT-WEEKLY in English No 540, 30 Sep 81 p 7

[Text]

The JDA is expected to adopt the U.S. Army/Raytheon Patriot by FY 1983 as the next-generation SAM-X surface-to-air missile system to replace the ASDF Nike-J and the GSDF Hawk, although it has sought funds for studies on the Nike-Phoenix, another SAM-X candidate, as well as the Patriot.

The survey on the Nike-Phoenix, proposed by Mitsubishi Heavy Industries Ltd., is likely to deny the advisability of its adoption. The JDA's internal bureaus as well as the ASDF and the GSDF favor the Patriot, according to informed sources.

Before the final adoption of the Patriot, the two services will conduct a joint survey on the missile system with the Americans, and commission them to prepare a possible Patriot procurement program. While advancing the survey, the ASDF plans to extend the service life of the outmoded Nike-J and the GSDF to replace the basic Hawk with the improved model. The SAM-X procurement program is expected to start in FY 1984 or thereafter.

CSO: 4120/18

MILITARY

ASDF PICKS KAISER'S HUD FOR F-4EJ

Tokyo JPE AVIATION REPORT-WEEKLY in English No 540, 30 Sep 81 p 7

[Text]

The ASDF has selected Kaiser's head-up display (HUD) for installment on the improved F-4EJ fighter-interceptor.

The ASDF, which plans to modify the F-4EJ by meantimes the HUD and other advanced components, had considered Kaiser's HUD and McDonnell Douglas's system for the F-15 fighter as F-4EJ HUD candidates. It eventually decided to adopt the Kaiser HUD, mainly in view of cost performance and weight. The ASDF wants Shimadzu Corp. of Japan to modify the Kaiser HUD before installment on the improved F-4EJ.

Shimadzu previously developed an over-hang type HUD for Japan's planned experimental short takeoff and landing aircraft on the basis of Kaiser's product. It has also been producing HUDs for F-15J fighter-interceptors under license by McDonnell Douglas.

CSO: 4120/18

TWO HELICOPTERS AS V-107 REPLACEMENTS SET

Tokyo JPE AVIATION REPORT-WEEKLY in English No 540, 30 Sep 81 p 8

[Text]

The three SDF services are expected to adopt different types of large helicopters as replacements for the current V-107s supplied by Kawasaki Heavy Industries Ltd.

Although the three services plan to start funding for new large helicopters simultaneously in FY 1983 under the FY 1980-84 Medium-Term Defense Program (MTDP), the JDA's internal bureaus may fail to unify their new helicopters into a single model because of their different operational requirements.

The MSDF may select the MH-53E, a minesweeping version of the Sikorsky CH-53E, as the replacement for the V-107 mine-sweeping helicopter, while the GSDF and ASDF may adopt the Boeing Vertol CH-47 series for replacement of the V-107 transport helicopter.

The MSDF is expected to procure six to 12 MH-53Es to improve its mine-sweeping capability. The GSDF's CH-47 procurement could total 40 to 50 aircraft. The first two, for training, are planned for funding under the FY 1980-84 MTDP. The ASDF may procure 10 CH-47s.

CSO: 4120/18

BRIEFS

16 VADS AA GUNS--The ASDF has requested funding of 16 20mm Vulcan Air Defense System (VADS) antiaircraft guns in FY 1982, although it has yet to complete operational evaluation of three VADS units funded in FY 1979. The VADS, which will be domestically produced under license for full-scale purchase starting in the next fiscal year, is designed to improve antiair defense capabilities of ASDF bases together with the Tan-SAM Short-range and portable surface-to-air missiles. The ASDF is also considering the 20mm Vulcan machine gun system aboard the retiring F-104J fighter as an antiaircraft gun system for air bases. Experimental modification of the 20mm Vulcan for ground use has been funded under FY 1981 budget. [Text] [Tokyo JPE AVIATION REPORT-WEEKLY in English No 538, 16 Sep 81 p 5]

SH-X PROJECT--The MSDF intends to launch a project for obtaining the SH-X next-generation antisubmarine warfare (ASW) helicopter in FY 1983, although the SH-X project could be reconsidered as part of the FY 1983-87 Medium-Term Defense Program (MTDP) to be prepared next year. The service had planned to start the project in FY 1982 with the ordering of two green aircraft of the Sikorsky SH-60B as an SH-X candidate. However, it has given up requesting funding of them in FY 1982 because funding priority has been given to the P-3C fixed-wing ASW aircraft, the HSS-2B ASW helicopter, and ships. It would be easier for the MSDF to request the green SH-60Bs in the absence of P-3C funding in FY 1983. But the service would have to further consider the necessity of the SH-X project before the request. The SH-X is planned to replace the HSS-2B starting from the late 1980s. According to the MSDF's own configuration, the green aircraft may be modified and mounted with electronic systems in five to six years. The modified SH-60B may be finally adopted as the SH-X in FY 1987 or 1988. [Text] [Tokyo JPE AVIATION REPORT-WEEKLY in English No 538, 16 Sep 81 p 7]

CSO: 4120/16

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